

APPARATUS AND METHOD FOR FORMING A BATTERY IN AN INTEGRATED CIRCUIT

Abstract of the Disclosure

A method and structure that provides a battery within an integrated circuit for providing
5 voltage to low-current electronic devices that exist within the integrated circuit. The method
includes Front-End-Of-Line (FEOL) processing for generating a layer of electronic devices on a
semiconductor wafer, followed by Back-End-Of-Line (BEOL) integration for wires the
electronic devices together to form completed electrical circuits of the integrated circuit. The
BEOL integration includes forming a multilayered structure of wiring levels on the layer of
10 electronic devices. Each wiring level includes conductive metallization (e.g., metal-plated vias,
conductive wiring lines, etc.) embedded in insulative material. The battery is formed during
BEOL integration within one or more wiring levels, and the conductive metallization
conductively couples positive and negative terminals of the battery to the electronic devices. The
battery may have several different topologies relative to the structural and geometrical
15 relationships among the battery electrodes and electrolyte. Multiple batteries may be formed
within one or more wiring levels, and may be conductively coupled to the electronic devices.
The multiple batteries may be connected in series or in parallel.